



Title: Pedestrian Connection Plan Preparation and Documentation

9/2/2021

To improve the consistency and quality of information presented in the construction plans sets that are generated for the Delaware Department of Transportation in regard to proposed pedestrian connections. This Engineering Instruction does not cover the requirements of the information to be provided in the construction plan set for laying out proposed curb runs, sidewalks, or any other proposed feature other than pedestrian connections.

General

During the design phase of a project, it is imperative to consider the constraints that construction of a proposed pedestrian connection may encounter. Constraints can include any combination of the following:

- Project scope,
- Existing topography,
- Existing features, and
- Existing right-of-way.

The constraints present at both “new” and “retrofit” pedestrian connection locations will determine the type and detail of information that must be provided in the construction plans. In general, the more constraints a location has the more information must be provided in order to construct the location as per the Engineer of Record’s intent.

It is the goal of the Department to document all required Requests for Practical Exceptions during the design phase; however, when it is determined during the construction phase that a pedestrian connection cannot be built as per plan, all questions should be directed back to the Engineer of Record. The Engineer of Record will be responsible for facilitating a Request for Practical Exception when determined necessary during the construction phase.

Survey Considerations

As with all projects, the survey limits, survey density, and survey control should be considered early in the project development process. Projects whose scope requires a full topographic survey of the entire work limits and not just that of the improvement’s proposed pedestrian connections should follow the information contained in EI PM-16-001: Surveying Standards, Requirements and Deliverables as well as the Department’s Survey Guidebook. On linear projects, where only the proposed pedestrian connection locations require a topographic survey, first consideration should be made to setting geodetic control and running a traverse and bench loop that encompasses the entire project area in accordance with the Department’s Survey Guidebook. When setting geodetic control and running a traverse and bench loop that encompasses the entire project area is infeasible, assumed coordinates may be used after discussion and written approval of the DelDOT Project Manager. All geodetic control established is to be set by the Department.

When assumed coordinates are used, the construction plans must clearly state each location in the contract that used assumed coordinates. The assumed coordinate control points must be easily re-creatable and clearly described in the construction plans by providing a traverse point diagram with a minimum of three associated tie points. If a location is using assumed coordinates and it is determined that additional right-of-way will need to be acquired, it cannot be acquired using the assumed coordinates. 6 Del. C. 1953, § 5501 of the Delaware State Code requires that all property information be recorded using NAD 83/91.



Construction Plan Presentation

The Department has classified three different and unique plan presentation requirements that are based on the type of constraints associated with a pedestrian connection location. Each pedestrian connection on a project should be evaluated individually to determine the amount of information that is required to be presented in the construction plan set. Included in this guidance as Appendix A are Example Plans which illustrate the information required to be provided in the construction plan sets based upon the constraints present at a proposed pedestrian connection. The information described in this document and depicted in Appendix A may be contained on separate plan sheets or combined in a logical manner depending on the program generating the plans and the scope of the project.

The Engineer of Record in combination with the DelDOT Project Manager will determine the constraints present at a proposed pedestrian connection location and what information must be generated and displayed in the construction plan sets in relation to the requirements of this Engineering Instruction. Additional information which does not get documented in the construction plan sets can be generated as deemed necessary by the Engineer of Record for design and verification purposes.

Unconstrained Pedestrian Connection

Unconstrained construction occurs where the existing environment can be readily altered during construction activities. Specifying a Standard Construction Detail in the construction plans for each location is appropriate. When a Standard Construction Detail is to be used in this environment, the designer should specify the pedestrian connection type on the plans and provide geometric points at the limits of the depressed curb on the Grades and Geometrics sheet at the interface of the curb or the integral curb and gutter and roadway pavement. The limits of the pedestrian connection should be shaded on the Construction Plan sheet to distinguish the intended template of the pedestrian connection.

It is important that the Engineer of Record verify that a Standard Construction Detail is applicable to the location and that no project constraints will prohibit its use.

Right-of-Way Constrained Pedestrian Connection

Right-of-way constrained construction occurs where the existing environment cannot be readily altered during construction activities because of the proximity of the existing or proposed right-of-way boundary. In these types of constrained environments, a pedestrian connection specific Construction Detail is required to verify that a PAS Manual compliant pedestrian connection will fit within the project's available right-of-way. The Construction Plan sheet which shows the pedestrian connection should identify that a location specific Construction Detail was developed and included in the plans. It is important to note that additional survey during the design phase may be required in order to accurately analyze these locations.

A Standard Construction Detail should first be considered in these constrained conditions. If it is determined that a Standard Construction Detail is applicable, the location specific Construction Detail should show all the proposed elements of the pedestrian connection to verify that it fits within the existing or proposed project's right-of-way. The elements of the pedestrian connection to be shown in the Construction Detail include but are not limited to the turning



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space, ramped segments, any flared sides, blended transitions, transitional segments, curb limits, and the truncated dome detectable warning surfaces. When a Standard Construction Detail will be the basis of design and construction, a geometric point should be provided at the limits of the depressed curb on the Grades and Geometrics sheet at the interface of the curb or the integral curb and gutter and roadway pavement. The limits of the pedestrian connection should be shaded on the Construction Plan and Construction Detail sheet to distinguish the template of the pedestrian connection.

If a Standard Construction Detail cannot be used for a particular pedestrian connection location as it would extend outside of the existing or proposed right-of-way, consideration should be given to acquiring additional right-of-way. If acquiring additional right-of-way is outside of the scope of a project, then a PAS Manual compliant Construction Detail must be created in accordance with the section entitled "Existing Feature Constrained Pedestrian Connection".

Existing Feature Constrained Pedestrian Connection

Existing feature constrained construction occurs where existing physical features in the project vicinity cannot be readily altered during construction activities. In these types of constrained environments, a location specific Construction Detail is required to be created to provide enough information to construct a PAS Manual compliant pedestrian connection. The Construction Plan must identify that a location specific Construction Detail was developed for the pedestrian connection and included in the plans. It is important to note that additional survey during the design phase may be required in order to accurately design these locations.

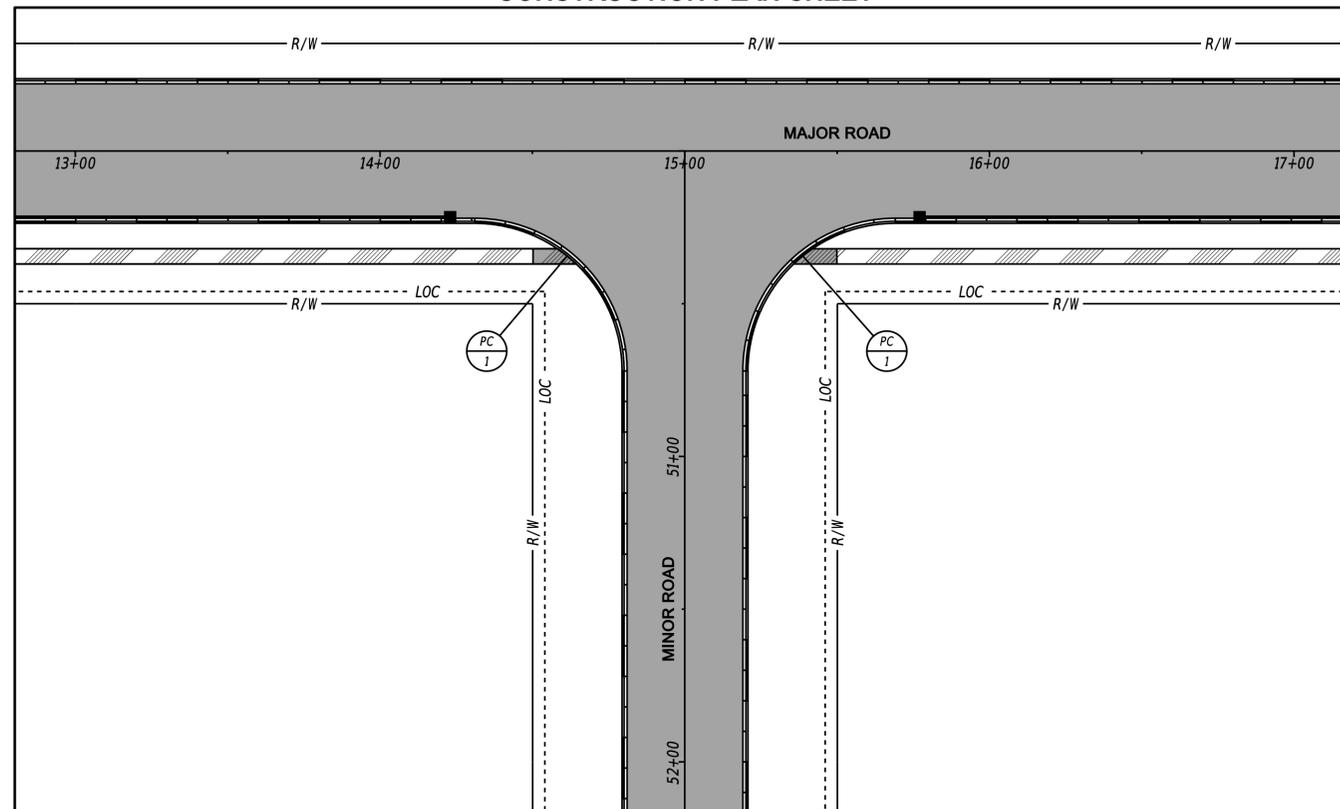
The location specific Construction Detail should identify all the proposed elements of the pedestrian connection including but not limited to the turning space, ramped segments, any flared sides, blended transitions, transitional segments, curb limits, and the truncated dome detectable warning surfaces. The detail should identify all pertinent cross slopes, running slopes as well as associated lengths, widths, and associated radii of the pedestrian connection elements. The Construction Detail should also provide geometric points at the limits of the depressed curb with an associated elevation at the interface of the curb or the integral curb and gutter and roadway pavement. On retrofit applications, elevations should also be included at the intended tie-in locations. The limits of the pedestrian connection should be shaded on the Construction Plan to distinguish the intended template of the pedestrian connection.

Request for Practical Exception Documentation

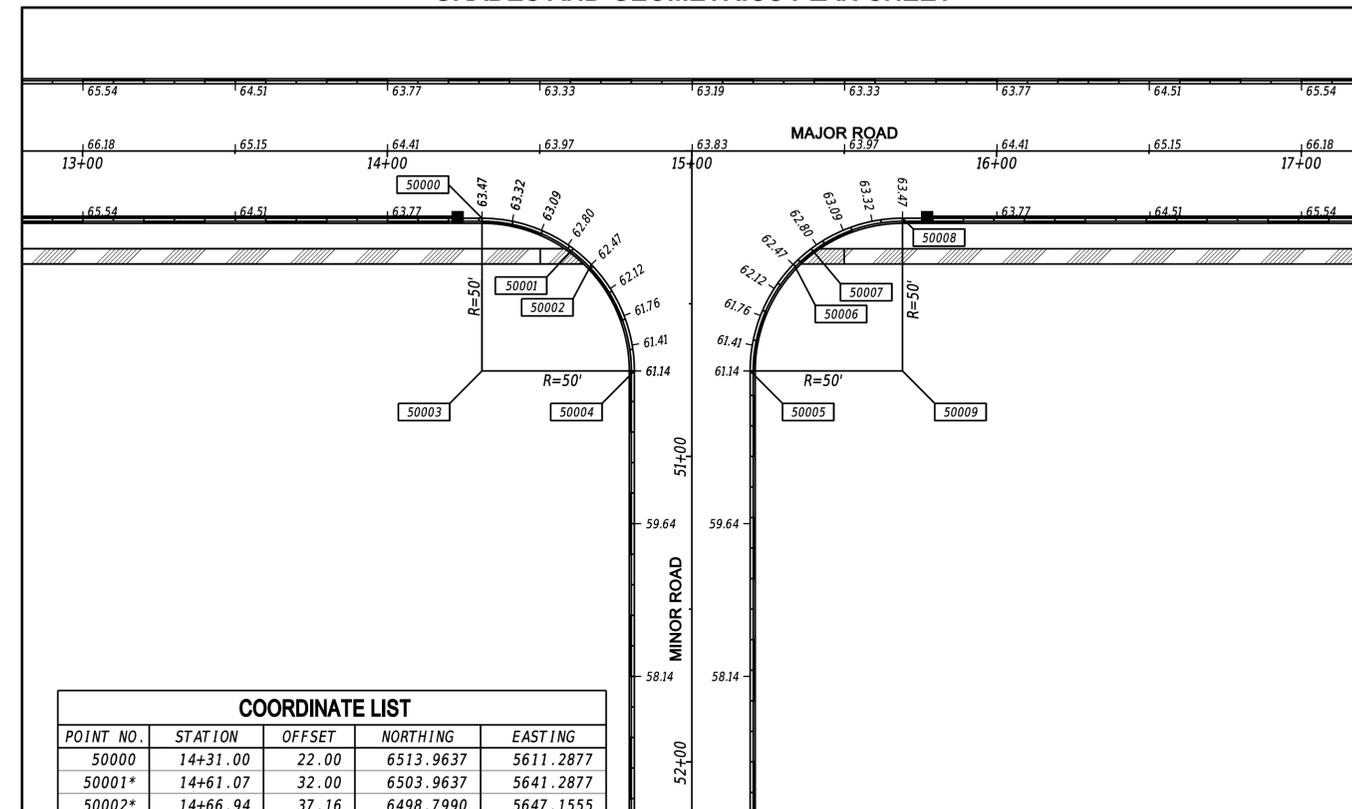
If a Request for a Practical Exception is required due to existing constraints that cannot be altered due to the project's scope, it is required that a note be added to the plans to state that a Request for a Practical Exception was created and available for both construction and inspection purposes. Depending on the program where the project is being generated and the deliverables that are created, where this information is documented will vary. It should be documented on the Construction Plan sheet as well as the Construction Detail sheet where the pedestrian facility design is shown. All approved Requests for a Practical Exceptions must be made available to the appropriate Construction Management staff.



CONSTRUCTION PLAN SHEET



GRADES AND GEOMETRICS PLAN SHEET

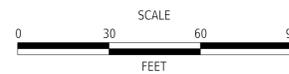


COORDINATE LIST

POINT NO.	STATION	OFFSET	NORTHING	EASTING
50000	14+31.00	22.00	6513.9637	5611.2877
50001*	14+61.07	32.00	6503.9637	5641.2877
50002*	14+66.94	37.16	6498.7990	5647.1555
50003	14+31.00	72.00	6463.9637	5611.2877
50004	14+81.00	72.00	6463.9637	5661.2877
50005	15+19.00	72.00	6463.9637	5699.2877
50006*	15+33.37	37.00	6498.9637	5713.5806
50007*	15+39.07	32.00	6503.9637	5719.2877
50008	15+69.00	22.00	6513.9637	5749.2877
50009	15+69.00	72.00	6463.9637	5759.2877

* POINT PROVIDED IS AT THE INTERFACE OF CURB / CURB & GUTTER AND THE EDGE OF PAVEMENT.

ADDENDA / REVISIONS



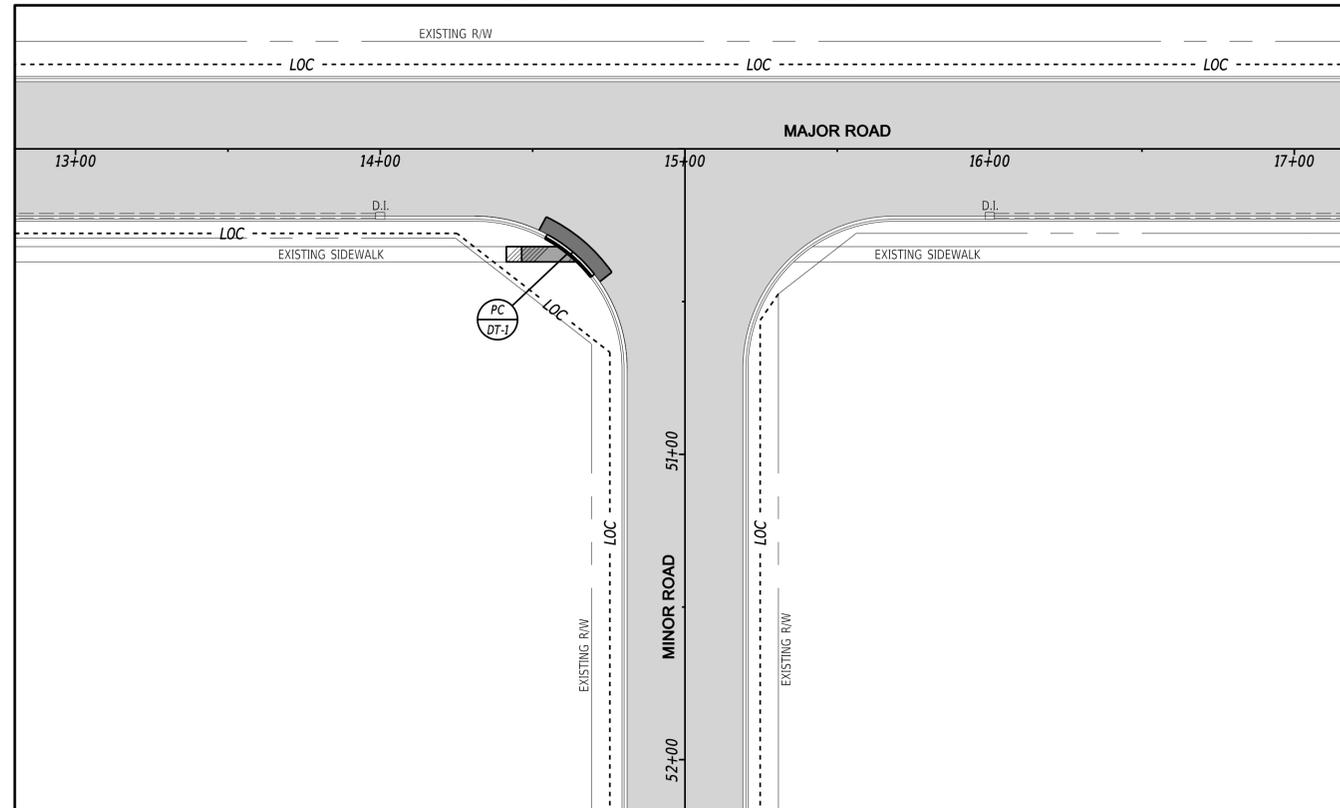
UNCONSTRAINED PEDESTRIAN CONNECTION EXAMPLE PLAN

CONTRACT	BRIDGE NO.	N/A
N/A	DESIGNED BY:	M. DESIGNER
COUNTY	CHECKED BY:	M. MANAGER
N/A		

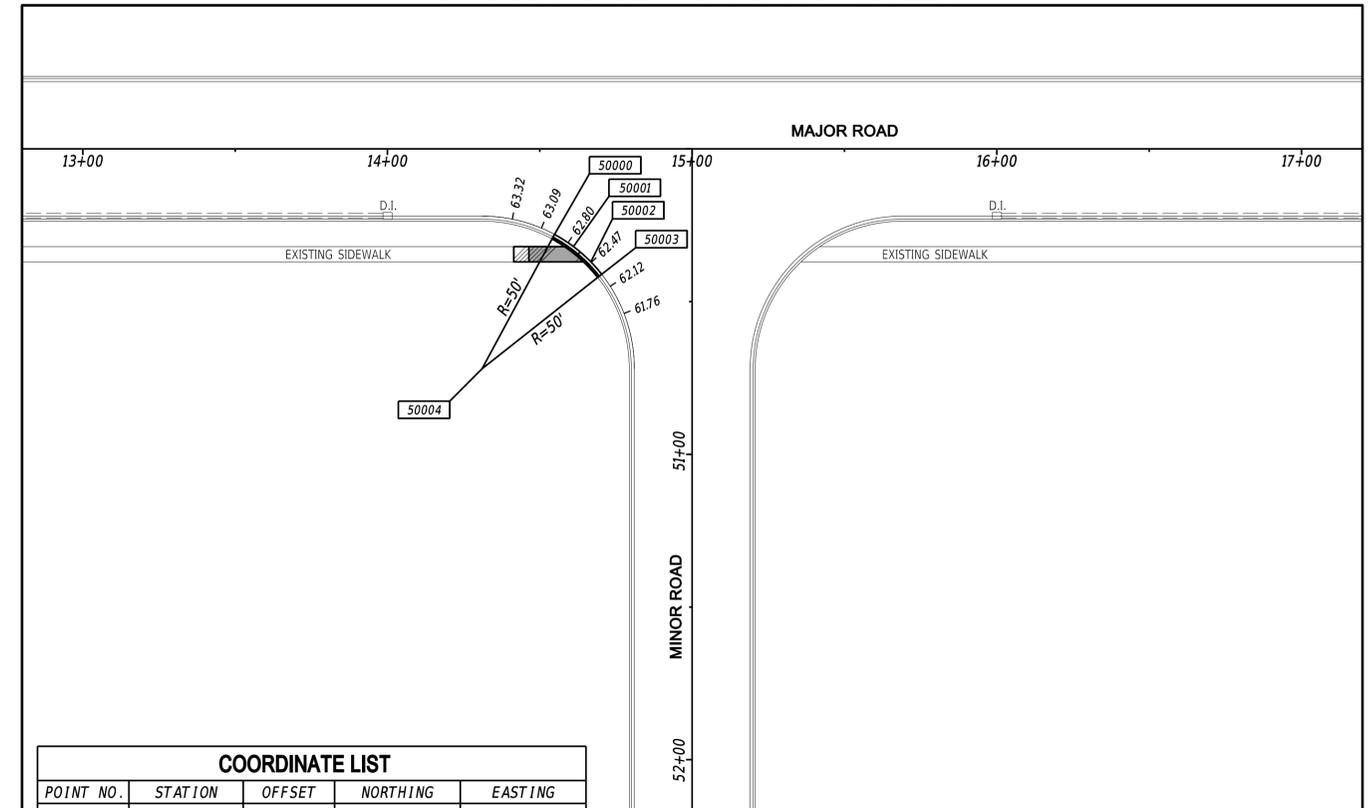
PM-18-001
APPENDIX A

SECTION
N/A
SHEET NO.
1

CONSTRUCTION PLAN SHEET



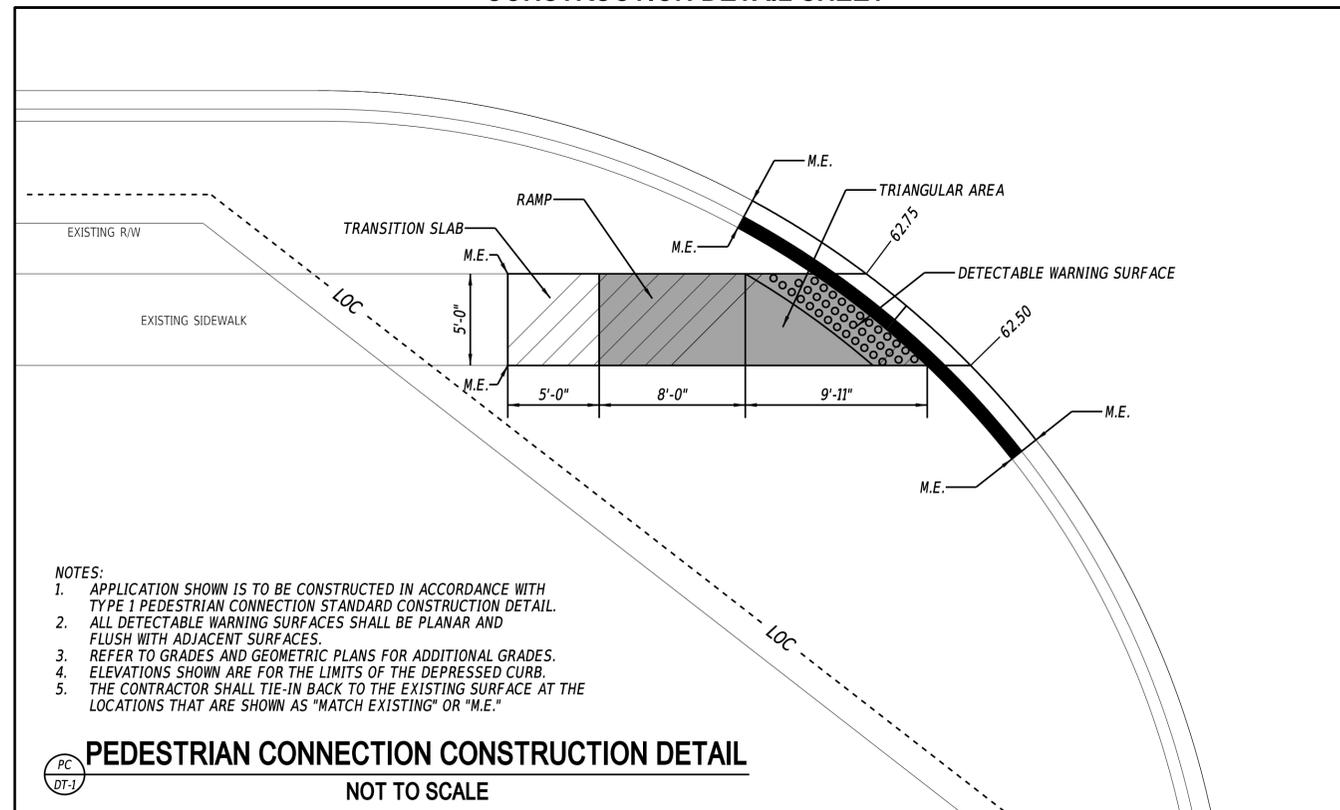
GRADES AND GEOMETRICS PLAN SHEET



COORDINATE LIST				
POINT NO.	STATION	OFFSET	NORTHING	EASTING
50000	14+54.77	28.01	6507.9508	7135.0601
50001*	14+61.07	32.00	6503.9637	5641.2877
50002*	14+66.94	37.16	6498.7990	5647.1555
50003	14+31.00	63.88	6507.9508	7135.0601
50004	14+31.00	72.00	6463.9637	7111.2877

* POINT PROVIDED IS AT THE INTERFACE OF CURB/ CURB & GUTTER AND THE EDGE OF PAVEMENT.

CONSTRUCTION DETAIL SHEET

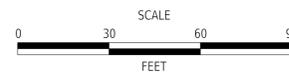


- NOTES:
1. APPLICATION SHOWN IS TO BE CONSTRUCTED IN ACCORDANCE WITH TYPE 1 PEDESTRIAN CONNECTION STANDARD CONSTRUCTION DETAIL.
 2. ALL DETECTABLE WARNING SURFACES SHALL BE PLANAR AND FLUSH WITH ADJACENT SURFACES.
 3. REFER TO GRADES AND GEOMETRIC PLANS FOR ADDITIONAL GRADES.
 4. ELEVATIONS SHOWN ARE FOR THE LIMITS OF THE DEPRESSED CURB.
 5. THE CONTRACTOR SHALL TIE-IN BACK TO THE EXISTING SURFACE AT THE LOCATIONS THAT ARE SHOWN AS "MATCH EXISTING" OR "M.E."

PEDESTRIAN CONNECTION CONSTRUCTION DETAIL

NOT TO SCALE

ADDENDA / REVISIONS



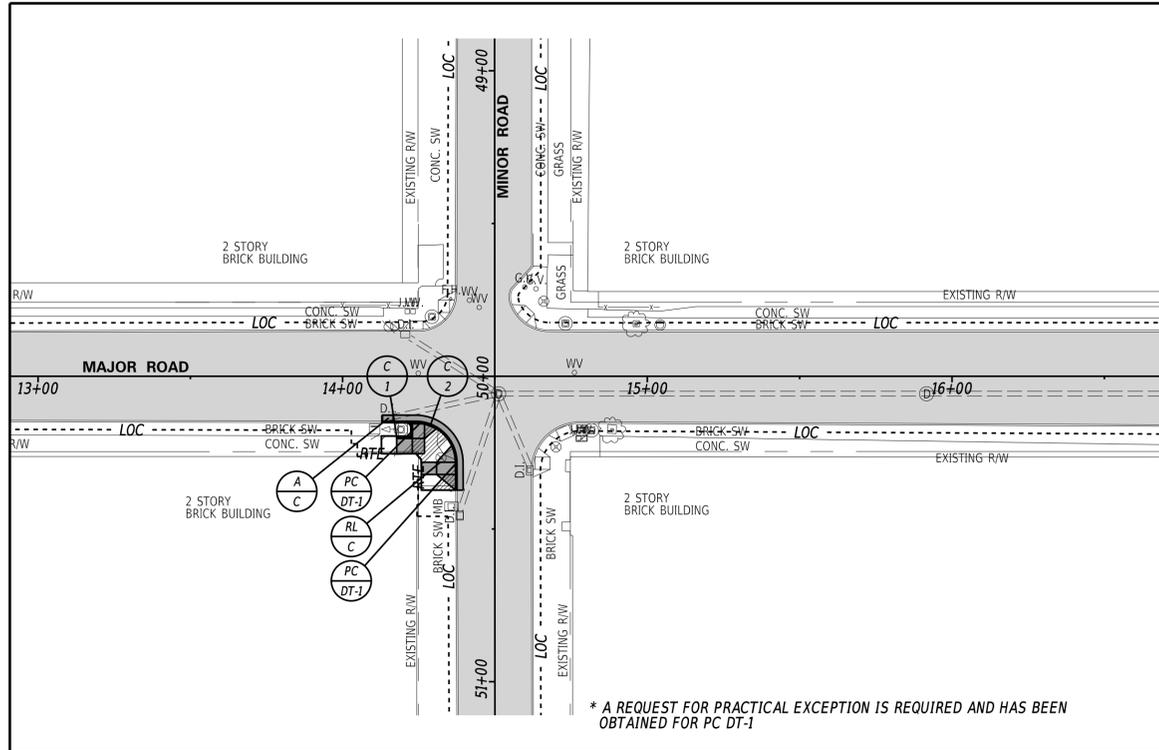
R/W CONSTRAINED PEDESTRIAN CONNECTION EXAMPLE PLAN

CONTRACT	BRIDGE NO.	N/A
N/A	DESIGNED BY:	M. DESIGNER
COUNTY	CHECKED BY:	M. MANAGER
N/A		

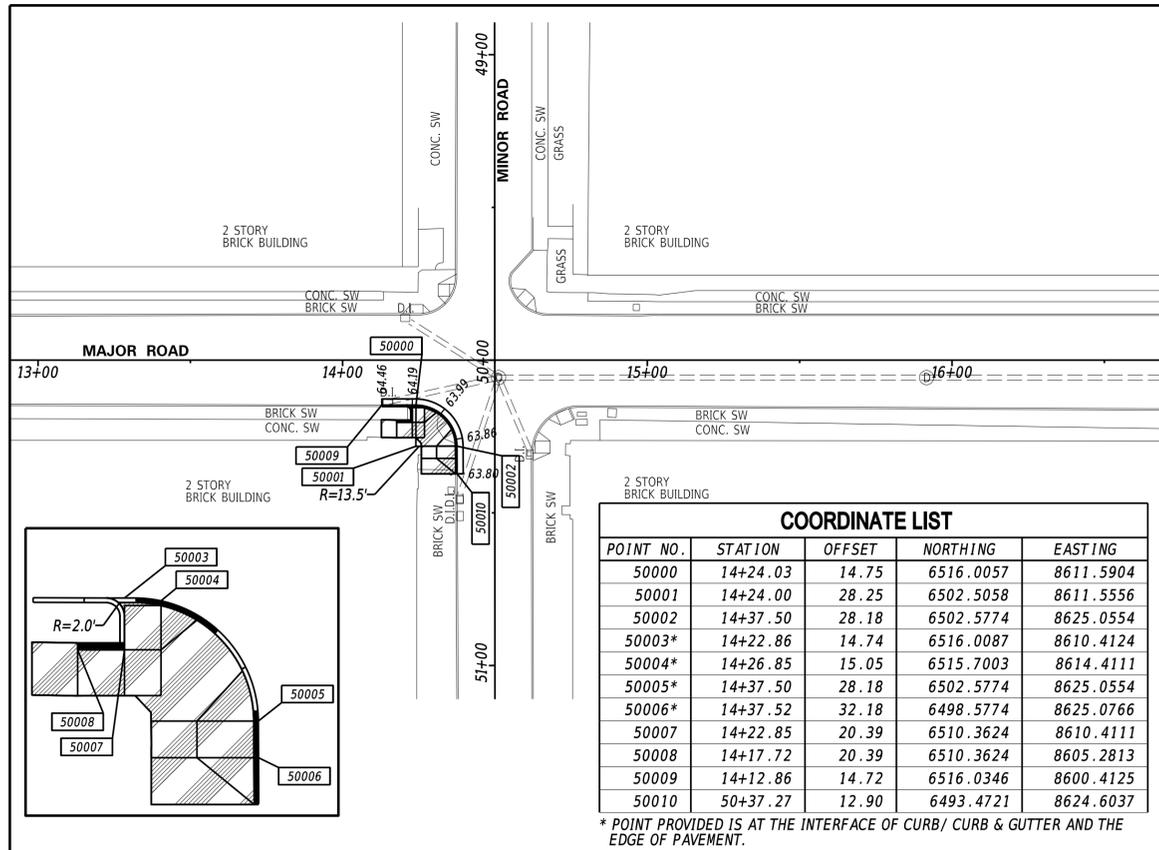
PM-18-001
APPENDIX A

SECTION
N/A
SHEET NO.
2

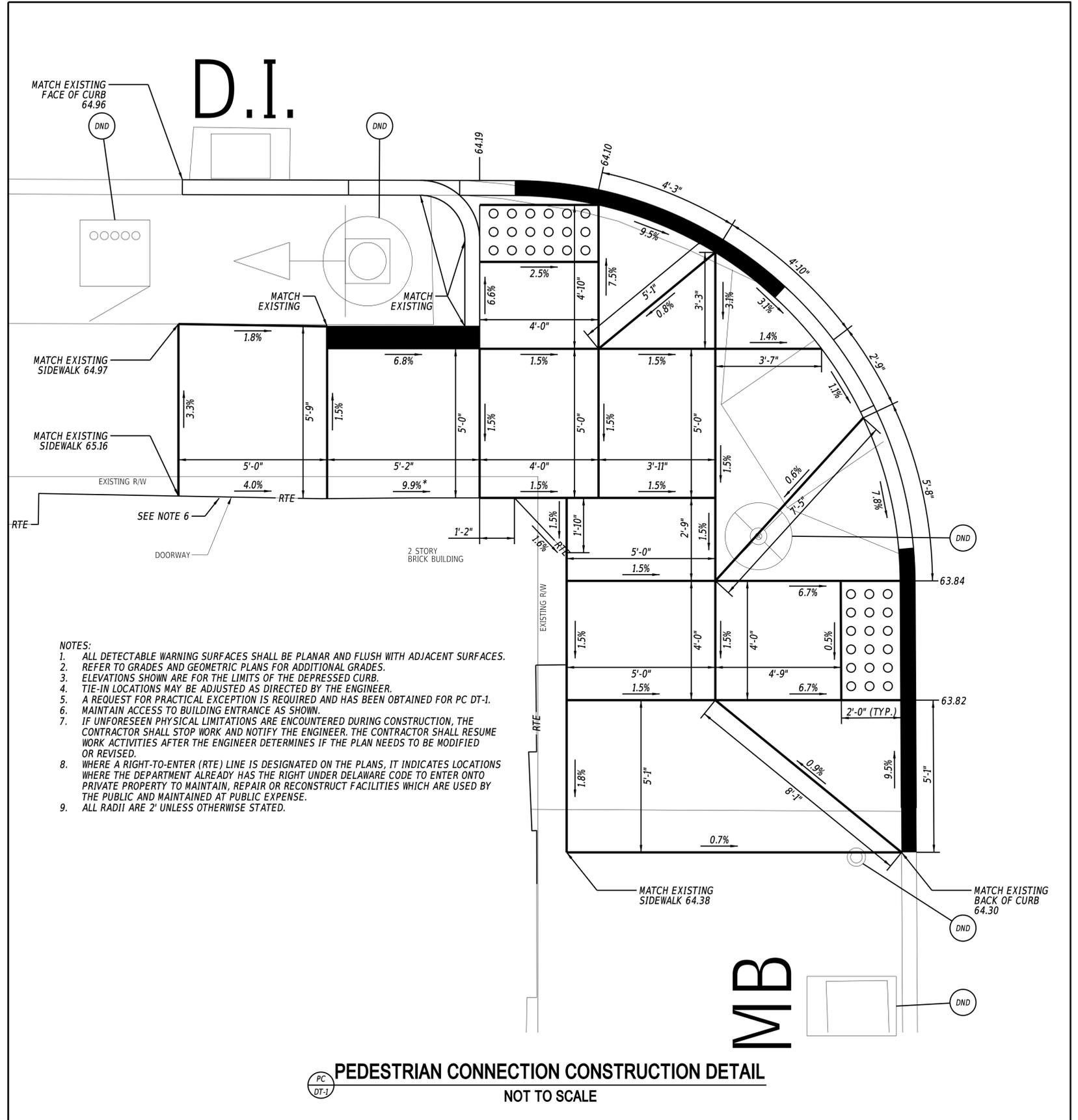
CONSTRUCTION PLAN SHEET



GRADES AND GEOMETRICS PLAN SHEET



CONSTRUCTION DETAIL SHEET



PEDESTRIAN CONNECTION CONSTRUCTION DETAIL
NOT TO SCALE

ADDENDA / REVISIONS



EXISTING FEATURE CONSTRAINED
PEDESTRIAN CONNECTION
EXAMPLE PLAN

CONTRACT	BRIDGE NO.	N/A
N/A	DESIGNED BY:	M. DESIGNER
COUNTY	CHECKED BY:	M. MANAGER
N/A		

PM-18-001
APPENDIX A

SECTION
N/A
SHEET NO.
3